Part D

Draft Guidance on Laboratory Analytes/Measurements And Their Consideration in Preparation Of A Detailed Study Plan

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Part D

1.0 Common Laboratory Water Quality Analytes/Measurements

1.1 Introduction

The selection of all water quality parameters for lab analysis (physical, chemical, biological) or specific suites of analyses to be obtained at each Network monitoring station is the responsibility of the Network. Information developed from the Planning and Assessment Phase I effort should identify stressors and associated indicator parameters, as well as other parameters that may be appropriate for monitoring in the Network's more significant water bodies. In addition to parameters selected for monitoring related to a site-specific stressor or regulatory issue, parameters may also be selected that are applicable to long-term monitoring of some baseline indicator where no current threat may exist but future threats or conditions are foreseen as possibly being associated with some type of anticipated development or change in water quality. Long-term monitoring of this type could provide a basis for identifying change or conducting some trend analysis to establish an impact. Also, some parameters may be monitored to meet the needs of another agency that may be involved in a cooperative funding effort with Network.

Networks may choose to use the table of contents for this section as a fairly comprehensive listing of the most common parameters to consider for laboratory analysis. This listing of possible chemical and biological parameters however is by no means exhaustive, and Network staff are encouraged to consult several other sources of information to choose the appropriate parameter for a particular stressor and to determine the best analysis methods applicable or any additional parameters that may be analyzed to address specific water quality concerns, impacts, or potential long-term threats.

A wide variety of sources exist that discuss one or more "standard" methods of analysis that may or may not be acceptable to a governing or regulatory authority (usually state). For this reason, **Networks should carefully consider their selection of a lab and the sampling and analysis methods employed for each analyte to ensure that the data quality objectives are met**. The laboratory conducting the analyses of monitored parameters and the methods of analysis used should be identified in the detailed study plan submitted to WRD. The lab selection process should follow Process Planning Step 14 outlined in Part B of this guidance (http://science.nature.nps.gov/im/monitor/protocols/wqPartB.doc), and the rationale for selecting parameters to monitor should follow the guidance of steps 6 and 9 of that same planning process. Some of the best EPA and USGS web sites for water quality standards and water analysis methods/information include the following:

Standard Methods (40CFRs) at: http://www.epa.gov/docs/fedrgstr
Various parameter specific stds. at: http://epa.gov/pesticides
(substitute selected parameter etc.) /lead or /arsenic

USGS analysis methods at: http://toxics.usgs.gov/topics/measurements.html
USGS (pesticides and breakdown products) at:
http://toxics.usgs.gov/highlights/pestdcgmethods.html

USGS bibliography of water toxic methods at:
http://toxics.usgs.gov/bib/bib-methods.html

State-by-state look at CWA and links to analysis methods at:
http://www.rivernetwork.org/cleanwater/cwa_search.asp